**Introduction**

Cartography is the art, science, and technology of making maps, together with their study as scientific documents and works of art. In this context, we may regard all types of maps including all plans, charts, and sections, three-dimensional models.

They help indicate where:
1. The physical phenomena to be prevented or protected against are located
2. To place structural defenses
3. it can help determine the zones of risk and vulnerability.
4. It can also locate resources that are to be used when disaster strikes

**Lesson**

Types of Maps
1. Base Maps
The term base map is see often in GIS and refers to a collection of GIS data and/or orthorectified imagery that form the background setting for a map. The function of the base map is to provide background detail necessary to orient the location of the map. Base maps also add to the aesthetic appeal of a map.

Map of the central regions of Ancient Greece.
Source: Wikimedia Commons.

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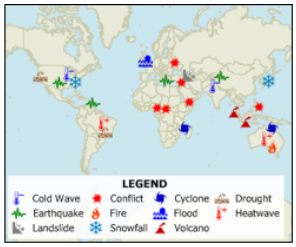
2. Thematic Maps .
These are maps which depict information on a particular topic or theme. The detail portrayed on a thematic map may be physical, statistical, measured, or interpreted, and sometimes requires specialist knowledge by the map user.
Weather, population density and geology maps are examples of thematic maps.
3. Emergency Maps

Emergency mapping is an interactive form of cartography designed to assist with the real-time management of disasters. It is not generally used before disaster strikes, except perhaps for

scenario building. It must be designed beforehand so that it can be used during the emergency. It should Contain:

1. Several elements commonly appear in emergency maps:
2. Lifelines, including roads that will be used by emergency vehicles, airports
3. Air corridors along which airborne relief will travel, and the main conduits of essential utilities, such as water, gas and electricity
4. Location of key facilities, such as hospitals, fire, police and ambulance stations, and emergency-operations centers
5. Points of special vulnerability, such as buildings that may collapse onto roads and block them with rubble, bridges that may fall down, floodable underpasses, and river embankments that may burst under the weight of high water discharge
6. The principal telecommunications nodes and their paths.

Example 1:



arts colleges
QUEEN'S PARK HIGH SCHOOL
An 11-18 Comprehensive School incorporating a specialist Visual Arts College
serving its young people and the local community
Fire Evacuation Plan
Fire assembly point
Rear Playing Field
T3
T2
TEAM BASE
S8
T4
T1
S7
S6
Fire Action
The school Fire Alarm Warning is given by a continuous sounding tone.
Follow instructions given by your teacher.
On discovering a fire
A teacher will raise the Alarm by operating the nearest Fire Alarm Call Point.
On hearing a warning of fire
Evacuate the premises quickly and calmly.
Close all doors behind you.
Proceed along the marked exit routes.
Report to the Fire Assembly Point.
Report missing children to the Head Teacher.
Do not take any unnecessary risks.
Do not run, walk in silence.
Do not use the lifts, use the stairs.
Do not re-enter the building until the Head Teacher has stated that it is safe to do so.
Fire Exit Doors
Water Extinguisher
Foam Extinguisher
Fire Exit Route
Fire Exit Path
CO2 Extinguisher
Chemical Extinguisher
Break Glass
Powder Extinguisher
Fire Blanket
Science / Art, Design & Technology
Rooms S6, S7, S8, T1, T2, T3, T4, Team Base

https://culc-coventry-parse-bucket.s3.amazonaws.com/fa76a4c710dbea96f8e5e14a466dcaa5image.png

Example 2:

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GIS
GIS stands for ''Geographic Information System''. GIS application is used to deal with spatial information on a computer. Most precisely it is the spatial representation, capture, storage, retrieval, analysis, display of information (attribute data) that is positioned to correspond to the same X, Y (and Z, if needed) coordinates throughout the various map layers (European emergency number association, 2015). At same time, GIS uses words, numbers and other data from database and makes correlation with locations with the aim to show that on maps. It is a tool for help to responsible people who have to take right decision. It is worth mentioning that GIS cannot make decision alone.

GIS is not only a program for representing maps. It is far beyond that because GIS adds useful information for parts of maps. By enhanced maps, decision makers have great possibilities to analyze locations, their rela-tions, the fastest way to arrive at the particular location or similar. These possibilities are very important in many areas, especially in police, mili-tary jobs and other related to safety of citizens. Emergency management is very important for safety and security and GIS is one very useful tool for headquarters, command units and others who decide about actions before, during and after some emergency situations.
Read the article below to gain better understanding on how GIS is used in Emergency Management

https://culc-coventry-parse-bucket.s3.amazonaws.com/1d9bec34fb4f6d698a8faf01a6ee3cfeusing_gis_in_emergency_management.pdf

**Activities**

Welcome to week 3! This week we will be exploring the topic of Specific Tools and Techniques for Emergency and Disaster Management (Part 1). Please complete the following activity.

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Task
Working in your groups you are to evaluate the use of cartography within emergency and disaster management. You are to research the different types of cartography that are available and consider how they can be utilised.

Here are some examples to help get you started - planning map, impact map, emergency map. Find at least 3 other types of maps that can be useful and provide examples of these. Your examples could include maps of the area of locations where you live, work or grew up.

Share your findings along with a short description of the maps with the class on the feed under the tag “Maps”.

Compare your findings with the other groups and discuss the variations in the locations of the maps shown and the potential implications of the different locations (e.g. potential issues with a lack of access by road in an emergency.)

Share your table on the feed and compare your descriptions of the level of details. Also, discuss on the feed which scales may be most useful in different situations.

Educator feedback will be provided on the feed for each of these tasks either on the group outputs or as a generalised feedback to the class.

💡 Tip: If you wish, you can review these additional resources to help you to complete the activity


• Coppola D.P (2015) Introduction to International Disaster Management. Elsevier: Oxford
• Hopkin P. (2010) Fundamentals of Risk Management. Kogan page Limited: London
• Hester R.E and Harrison R. M. (2007) Chemicals in Environment – Assessing and Managing Risks. RSC Publishing: Cambridge


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🚀 Ask & Answer Questions

Don't forget: you can use the feed to raise questions for me and the rest of the class.

Add your questions to the Community Feed and take a look at others' questions, using and filtering by the tag Q&A. If you see a question which you'd like to answer, go ahead!

**Feedback**

To Do: In advance of the session, you need to:

📝 1. Refresh your knowledge of the key concepts covered and prepare to be quizzed!
📝 2. Be ready to discuss and critically analyse the work you have completed
📝 3. Catch up on the feed, ready for more group challenges!
📝 4. Think of a question you still have and add it to the feed using the tag Q&A

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Agenda for the Session:

🌐 Community Building Time: 30-60 mins before the start of the class for coffee & connection time with your class.
🌐 Exploration of Outputs (20 mins): Opportunity to discuss this week's activity and present your outputs to the rest of the group.
🌐Mastery Activity (30 mins): A live challenge activity to hone and test your learning, completed in groups:
🌐 Discussion: A chance to explore and discuss our learning.
🌐 Round up & Next Steps: What we've done, what more you can do and what's coming up next time.

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This Week's Mastery Activity:

Roleplay activity:
Scenario: Your group represents the management team of an Emergency and Risk Management Service company. You've been informed about the Nuclear leakage incident at Hanford Nuclear Facility in America which occurred Tuesday 3rd of May 2016. You've been consulted to advise (with the aid of a map) on how potential risks associated with this incident can be managed

You are to create a plan outlining how the risk can be managed.

You will then share your plan with the class and discuss and receive feedback from each other and the educator on any variations in each other's plans.